



A3232M / A6464M / A128128M A3232S / A6464S

VikinX Modular Analog Audio Router

User manual

Rev. 10

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Revision history

Current revision of this document is the uppermost in the table below.

Rev.	Repl.	Date	Sign	Change description
10	9	2011-01-26	NBS	Added pictures in Chapters 3.5.1 and 3.5.2.
9	8	2010-12-03	NBS	New template; Added connection information, Chapter 5.2.
8	7	2008-06-13	NBS	Expanded description of how to configure Mono/Stereo router(s), Chapter 3.2.1.
7	6	2007-11-06	NBS	Added description of how to configure Mono/Stereo router(s), Chapter 3.2.1.
6	5	2007-10-26		New front page.
5	4	2007-03-29		Added Materials Declaration and EFUP; updated EC Declaration of Conformity.
4	3			Updated product names and GYDA section
3	2	2006-02-09	NBS	Removed protocol and configuration details.
2	1	2005-09-28	NBS	Corrected RS-422 pinout description in Chapter 4.1.
1	0	2005-04-22	NBS	Corrected router size options and combined 9RU and 5RU frames.
0	-	2005-03-11	NBS	Initial Revision, based on VD/HD128M manual.

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1 Product overview

The Modular Analog Audio Router is part of the VikinX Modular product range, offering up to 128x128 X-points for Analog Stereo Audio signals.

This top of the line router provides a very compact frame, fully hot-swappable architecture, built-in dual redundant power supply and fully redundant controller functions.

Starting with the size of 64x64 mono audio, or 32x32 stereo audio cross-points, the router can be expanded under operation with 64x64 increments. Advanced control features like TCP/IP interface and SNMP agent, as well as comprehensive surveillance of the router's vital parameters are possible via the well known GYDA-VX controller.

As for our well known VikinX compact router series low power consumption has been important.

VikinX Modular provides a fully hot-swappable architecture, meaning that all components are front loaded without any active components on the rear panel.

VikinX Modular provides all important 3rd party control interfaces allowing the control of our routers through 3rd party management software. On top of that the Nevion's THOR management package allows control of the most common 3rd party routers. This enables you to utilize existing routers and management systems from other manufacturers and still draw the advantages of implementing VikinX Modular in your routing application.

1.1 Product versions

The following versions of the VikinX Modular Stereo Analog Audio Router are available:

Analog Stereo Audio router - 9RU:

A3232M	VikinX Modular router for Analog Stereo Audio, 9RU, equipped 32x32, expandable up to 128x128.
A6464M	As above, but equipped 64x64.
A128128M	As above, but fully equipped 128x128.

Analog Stereo Audio router - 5RU:

A3232S	VikinX Modular router for Analog Stereo Audio, 5RU, equipped 32x32, expandable up to 64x64.
A6464S	As above, but fully equipped 64x64.

2 Specifications

2.1 Mechanics

Dimensions:	HxWxD = 396x483x340mm, (19", 9RU), <i>or</i> HxWxD = 220x483x340mm, (19", 5RU).
Backplane card:	128x128 Analog Stereo Audio (9RU), <i>or</i> 64x64 Analog Stereo Audio (5RU).
X-point Modules:	64x64 mono, 32x32 stereo audio module cards.
System Controller:	1 Multicon VX-MOD ¹ card required, 1 redundant card is optional.

2.1.1 Emission/Immunity and Safety standards

Emission/Immunity standards: Compliant with CE EN55103-1 and 2, FCC part 15.

Safety standards: Compliant with CE EN60950, UL-1950/CSA22.2.

2.2 Power supply

Built-in, redundant power supply. 1 module included, 1 (redundant) optional.

Total power consumption:	<300W.
AC Supply voltage range:	90-130VAC / 180-254VAC, switchable, 50-60Hz, 300W.
AC Mains connector:	IEC 320, separate input for each PSU module.
Alarms:	Power failure alarm on relay contact closure, LED in front, and Open Collector to GYDA-VX.
Alarms connector:	RJ45.

2.3 Control

Standard features:

Audio control:	Stereo audio Left-/Right channel controlled independently.
Serial ports:	RS-232/RS-422 for protocol conversion, to VikinX compact control protocol, or to third party protocols. (1x per Multicon VX-MOD1 card).
Connector:	DB9, female.
Ethernet ports:	10/100BaseT Ethernet bus for external router control with new protocol. (1x per Multicon VX-MOD1 card).
Connector:	RJ45.
Monitored parameters: (via Multicon VX-MOD1)	- Module temperature. - Internal module voltages.
Status surveillance:	On each card with LED, and via system controller.
Configuration storage:	Removable compact flash card.
Synchronization ² handled by Multicon VX-MOD:	Analog Black Burst, Looped. Both PAL and NTSC supported. Tri-Level, Looped. For HD signal formats only.
Connector:	BNC.

¹ Syscon may be applied instead of Multicon VX-MOD in older installations.

² Synchronization of an Analog audio router is not necessary, but an available feature for users who intend to switch this router synchronized to video, using video synchronization signals.

Other features:

- SNMP agent, included with Multicon³.

Optional features:

Redundant control: Redundant Matrix Control using 2x Multicon VX-MOD1.

2.4 Signal specifications

Electrical signal inputs:

Type: Balanced.
Connector: DB25 female.
Impedance: > 10 kohm.
CMRR: > 60 dB.
Max. level: +23 dBu.

Electrical signal outputs:

Type: Balanced.
Connector: DB25 female.
Impedance: < 66 ohm.
CMRR: > 60 dB.
Max. level: +23 dBu.
Gain adj.: 1.0 dB (compensation for 600 ohm load).

Performance:

Frequency response: 20Hz-125kHz (-3dB)
20Hz-20kHz (± 0.3 dB).
Adjacent crosstalk: > 100 dB, 20Hz-20kHz.
Click noise: < 50dBu.
THD+N: < 0.01%.
SNR: > 90dB ref. to 0dB 20Hz-20kHz.

³ GYDA-VX must be applied for SNMP agent if Syscon is used; only Multicon includes SNMP agent.

2.5 Rear view⁴



The following service connectors can be found on the rear of the Modular Analog Audio Router:

- **AC Mains A:** AC mains power supply.
- **AC Mains B:** AC mains power supply (if redundant PSU is installed).
- **Serial A1 and A2:** RS-232 or RS-422 for external control protocols.
- **Serial B1 and B2:** RS-232 or RS-422 for external control protocols (if redundant Multicon VX-MOD is installed).
- **Ethernet A:** 10/100Base-T Ethernet bus for external router control.
- **Ethernet B:** 10/100Base-T Ethernet bus for external router control (if redundant Multicon VX-MOD is installed).

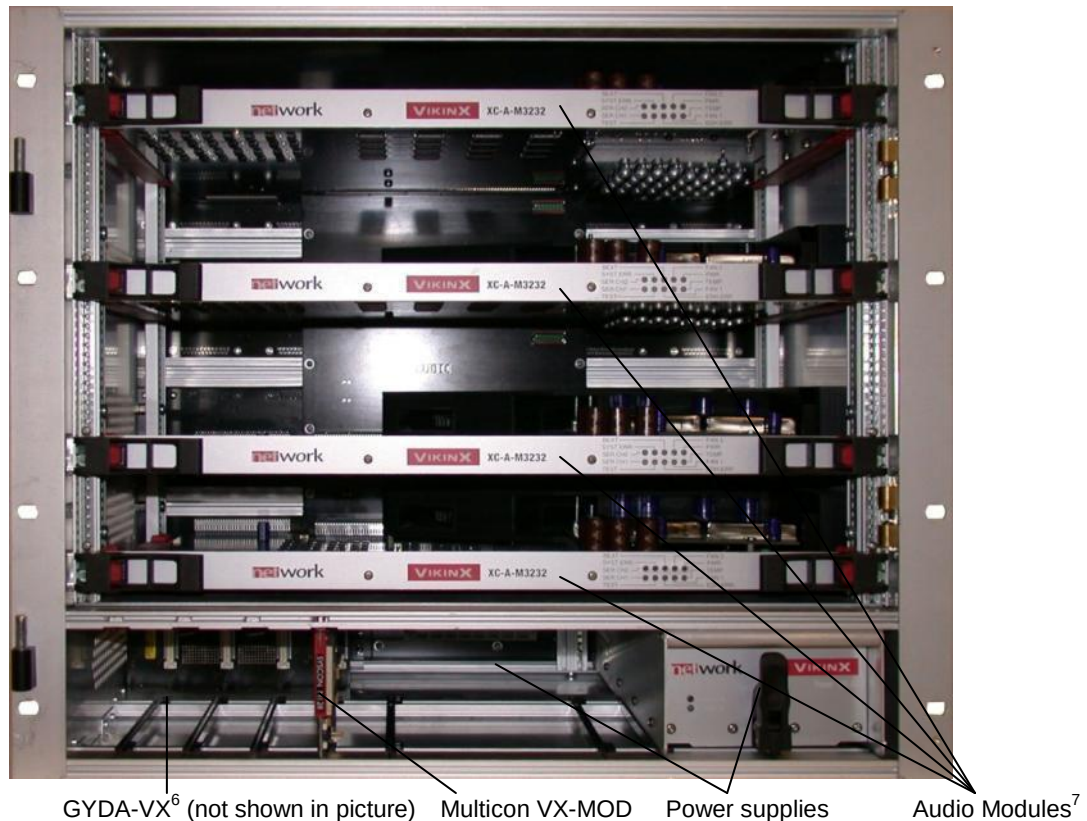
⁴ The picture shows a 9RU frame. The 5RU misses the upper two connector boards.

- **Serial GYDA A⁵**: RS-232 or RS-422 for external connection to GYDA-VX (if GYDA-VX is installed).
- **Serial GYDA B5**: RS-232 or RS-422 for external connection to GYDA-VX (if redundant GYDA-VX is installed).
- **Ethernet GYDA A5**: 10/100Base-T Ethernet bus for external connection to GYDA-VX (if GYDA-VX is installed).
- **Ethernet GYDA B5**: 10/100Base-T Ethernet bus for external connection to GYDA-VX (if redundant GYDA-VX is installed).
- **VIT 1²**: Synchronization signal 1 (in/out). Black burst/composite/tri-level sync reference input with passive loop-through for vertical interval switching.
- **VIT 2²**: Synchronization signal 2 (in/out). Black burst/composite/tri-level sync reference input with passive loop-through for vertical interval switching.
- **Power Alarm**: Power fail alarm relay contacts. Separate contact pair for each PSU module that is installed. Contact closes on power failure. See Chapter 2.2 for further description.
- **SW 1**: Configuration switch 1 (not in use).
- **SW 2**: Configuration switch 2 (not in use).

⁵ Not in use on routers controlled by Multicon VX-MOD.

3 Inside the Modular Analog Audio Router

In order to get an overview of the parts that form the Modular Analog Audio Router this chapter will highlight some of the main components.



3.1 How to access the modules

All active modules are accessible through the front of the router frame. If service or inspection is required, open the unit from the front. The door may be removed for easy access to the modules.

An important feature of all the modules in the Modular Analog Audio Router frame is that they are all hot-swappable. The user does not have to turn off the power in order to remove/reinstall/replace a module with active components inside the Modular Analog Audio Router.

When a board is hot-swapped and the reset button pushed, the router will restore the current setting within seconds.

3.2 How to configure the router and modules

Setting up and configuring the router and its modules are done with the Nevion Configurator software. The Nevion Configurator is shipped with the router, or may be downloaded from www.nevion.com.

For further instructions on router configuration, please see the online documentation in the Nevion Configurator.

⁶ GYDA-VX is not applicable in a frame controlled by Multicon VX-MOD.

⁷ The picture shows a 9RU frame. The 5RU misses the upper two X-point Modules.

When the size of the router is changed by adding or removing of Main X-point modules and/or I/O X-point modules, the Nevion Configurator must be reconfigured to fit to the new router size.

3.2.1 How to configure mono/stereo routers

You may configure a Modular router as either 32x32/64x64/128x128 Stereo, or 64x64/128x128 Mono, respectively. It is not possible to configure a 256x256 Mono from a 128x128 Stereo router.

In order to configure an A6464M (or A6464S) Mono router to an A3232M (or A3232S) Stereo router, please follow this procedure:

1. Open the Nevion Configurator;
2. Select the Multicon VX-MOD that belongs to the router you want to reconfigure;
3. Select *Modular level setup*;
4. Select *Show details*;
5. Select *Add new*;
6. Change the name under "Description" to "Left channel" on the first one and to "Right channel" on the second one;
7. On "Left channel", change the *physical input* to: "from 1 to 32" and *physical output* to: "from 1 to 32";
8. On "Right channel", change the *physical input* to: "from 33 to 64" and *physical output* to: "from 33 to 64";
9. Select *Apply*;
10. Restart the router, and you have a 32x32 Stereo Analog Audio router, where the left channel is connected to I/O#1-32 on the lower backplane and the right channel is connected to I/O#33-64 on the same backplane.

In order to configure an A3232S Stereo router to an A6464S Mono router, please follow this procedure:

1. Open the Nevion Configurator;
2. Select the Multicon VX-MOD that belongs to the router you want to reconfigure;
3. Select *Modular level setup*;
4. Select *Show details*;
5. Select *Add new*;
6. Change the name under "Description" to e.g. "Mono channel" on the new one;
7. On "Mono channel", change the *physical input* to: "from 1 to 64" and *physical output* to: "from 1 to 64";
8. Select *Apply*;
9. Restart the router, and you have a 64x64 Mono Analog Audio router.

Please see Chapter 5.2 for wiring schemes related to router configuration and control.

3.3 Power supply module

Each Modular Analog Audio Router frame comes with either one or two power supply modules. One power supply is standard, dual redundant power supply is an option.

The first power supply module is inserted in the *left* slot (A), and the second is inserted in the *right* slot (B).

3.3.1 Module insertion

In order to insert a power supply module one must insert the module via the special plastic guide rails into its position. Once the module is inserted, fix the module by lifting up the handle on the front and pushing it to the upright position.

3.3.2 Module removal

In order to remove a power supply module, one must pull down the handle on the front downwards to a horizontal position, and pull the module out with the bar on top of the power module.

3.3.3 How to connect power to the Modular Analog Audio Router

There are two power connectors on the back of the frame. Both of these connectors are for AC mains connection.

Use an IEC 320 connector to connect AC mains to the Modular Analog Audio Router frame.

There is a switch on the right hand side of the power supply module that selects mains voltage. The mains voltage can be either 110VAC or 230VAC. This switch *must* be set in the correct position, depending on the mains voltage on the router's site.

Failing to select correct AC mains voltage properly may damage the Power Supply Unit.

If the frame is equipped with a single power supply module, only one AC mains connection is used. However, if the frame is equipped with dual, redundant power supply modules, both AC mains connectors must be used, preferably from two different mains circuits.

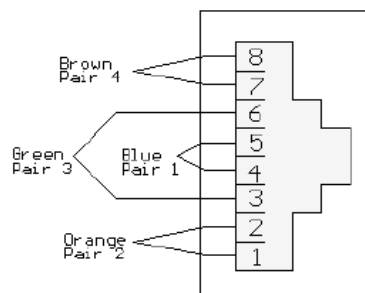
3.3.4 Status LEDs and relay contacts

There are 2 LEDs on the front of each power supply module, and they indicate the following:

- The *upper, RED* LED should be normally OFF. If it is ON, there is a power supply failure, indicating that the power supply module must be replaced.
- The *lower, GREEN* LED must be ON when mains power is connected. If this LED is OFF, it means that there is no mains power supplying the frame.

There are also two Power fail alarm relay contacts on the rear side of the frame; see Chapter 2.2 for details. Each installed PSU module has a separate pair of contacts. The relay contact is normally open, and the contact *closes* on power failure.

- The PSU module A alarm is formed by contact between Pin 3 and Pin 6 (Green pair)
- The PSU module B alarm is formed by contact between Pin 1 and Pin 2 (Orange pair)



3.4 System controller - Multicon VX-MOD

Each VikinX Modular frame comes with either one or two system controller cards, Multicon VX-MOD. One Multicon VX-MOD is necessary to control the router; dual redundant Multicon VX-MOD is an option.



Please see separate [Multicon VX-MOD](#) manual for details about configuration and control.

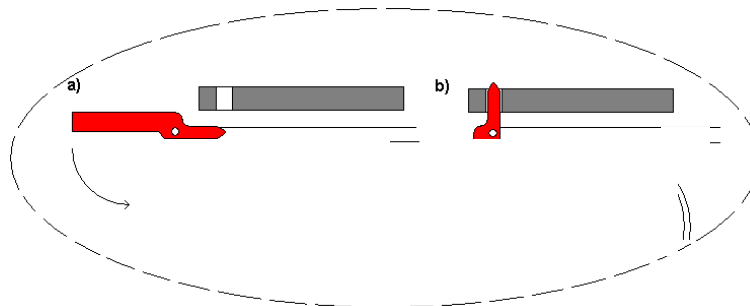
Multicon VX-MOD can be enabled for 3rd party control interfaces. Please contact your Nevion representative for details. Further, Multicon provides the user with an SNMP agent.

Your Multicon VX-MOD card(s) may be inserted in any of the two slots (A) and (B).

All the configuration parameters, control parameters, etc. are stored in the Compact Flash (CF) memory of the Multicon VX-MOD card. This provides a high grade of security for the user, as he just needs to remove the CF card if the Multicon VX-MOD card fails, and install this CF card on a new Multicon VX-MOD card. The router will not notice the difference.

3.4.1 Card insertion

The frame is equipped with plastic guide rails to align the Multicon VX-MOD cards into their respective positions. Slide the card into the plastic guide rails inside the frame until the red handle is close to the frame front. A detailed description of the last part of the insertion process is shown in the figure below.

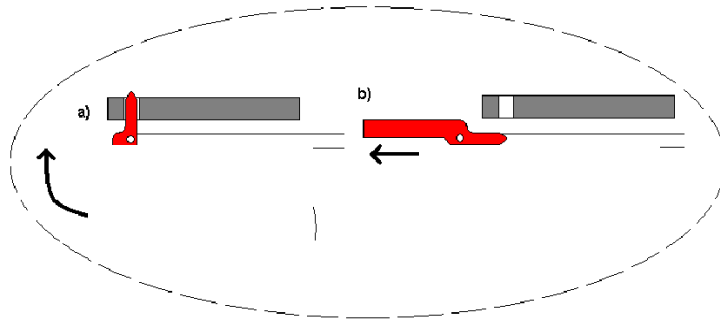


On the top of the card tray, there is a hole above each module slot. When the tip of the handle is just below this hole, start to push the handle downwards as in the figure. The tip of the handle enters the hole and the card is locked and proper contact ensured when the handle is in downright position.

Do not use excessive force; the card should enter easily – proper insertion is almost effortless.

3.4.2 Card removal

To remove a module card from the sub-rack frame, release the card by moving the red handle until it is in horizontal position, as shown in the figure below. Then pull the card out of the sub-rack with the red handle.



3.4.3 Status LEDs and reset button

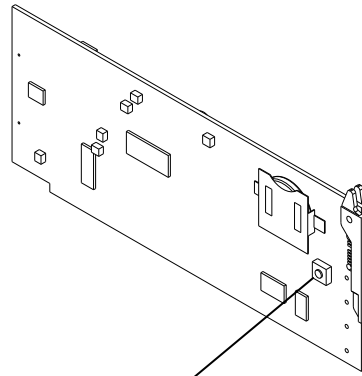
There are 4 LEDs on the front side of the Multicon VX-MOD card, and a reset button on the rear side.



The LEDs indicate the following:

Diode	Red LED	Yellow LED	Green LED	No light
Status	Card error.	<i>Not applicable.</i>	Overall status of the card is OK	Card has no power, or is not inserted correctly.
Eth	<i>Not applicable.</i>	Full duplex connection.	Half duplex connection.	No Ethernet link established; check cable.
Warn	Abnormal situation: no functional error, but a situation that requires attention.	<i>Not applicable.</i>	Normal situation.	<i>Not applicable.</i>
Load	High load ⁸ on the μ Controller. May occur during system start up and software reconfigurations / - upgrades.	Medium load on the μ Controller.	Low or normal load on the μ Controller.	<i>Not applicable.</i>

⁸ Red LED means 100% load on the Multicon. This may occur for intervals up to approximately 20 seconds. Longer periods may indicate that there is something wrong with the Multicon.



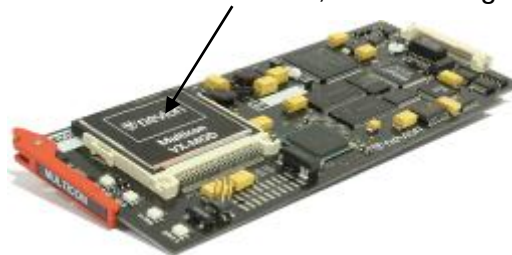
Reset button

The reset button on the rear side is used to perform a hard reset of the card. Do not perform a hard reset, unless the situation demands this. By performing a hard reset, the user loses control of the router, and will not get control of the router until approximately 20 seconds after releasing the reset button.

3.4.4 CF-card and battery

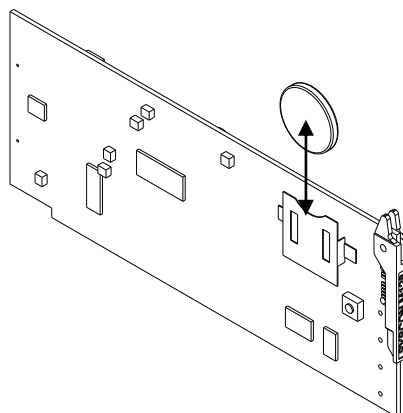
All the information regarding the router configuration, as well as information regarding control panels that are connected to the router, is stored in the Compact Flash card on the Multicon VX-MOD card.

If it is necessary to remove and/or insert a CF card, the following must be done:



1. Remove the Multicon VX-MOD card from its slot, according to the description earlier in this manual.
2. Slide the CF card out of its socket, and insert the new CF card into the socket.
3. Insert the Multicon VX-MOD card into its slot, according to the description earlier in this manual.

If it is necessary to remove and/or insert a battery, the following must be done:



1. Remove the Multicon VX-MOD card from its slot, according to the description earlier in this manual.
2. Slide the battery out of its socket, and insert the new battery into the socket.

3. Insert the Multicon VX-MOD card into its slot, according to the description earlier in this manual.

3.5 X-point module

Each VikinX Modular frame must be equipped with at least one X-point card, in order to work as a router.

A maximum of four X-point cards can be inserted into the 9RU frame, providing router sizes from 32x32 stereo audio, via 64x64 stereo audio, up to 128x128 stereo audio.

A maximum of two X-point cards can be inserted into the 5RU frame, providing router sizes of either 32x32 stereo audio or 64x64 stereo audio.

The X-point cards are inserted from the lower card tray (I/O#1-32/64), up to the upper card tray (I/O#97-128 or I/O#33-64).

3.5.1 Card insertion

To insert an X-point card, slide the module along the plastic guide rails into its position. On both sides of the card tray there is a hole next to each module slot. Use the two handles, which are located on the front of the module to seat the module.



When the tip of both handles is just next to these holes, start to push the handles ***simultaneously*** inwards the card.



The tip of the handles enters the hole and the card is locked and proper contact ensured when you hear a click from **both** handles.

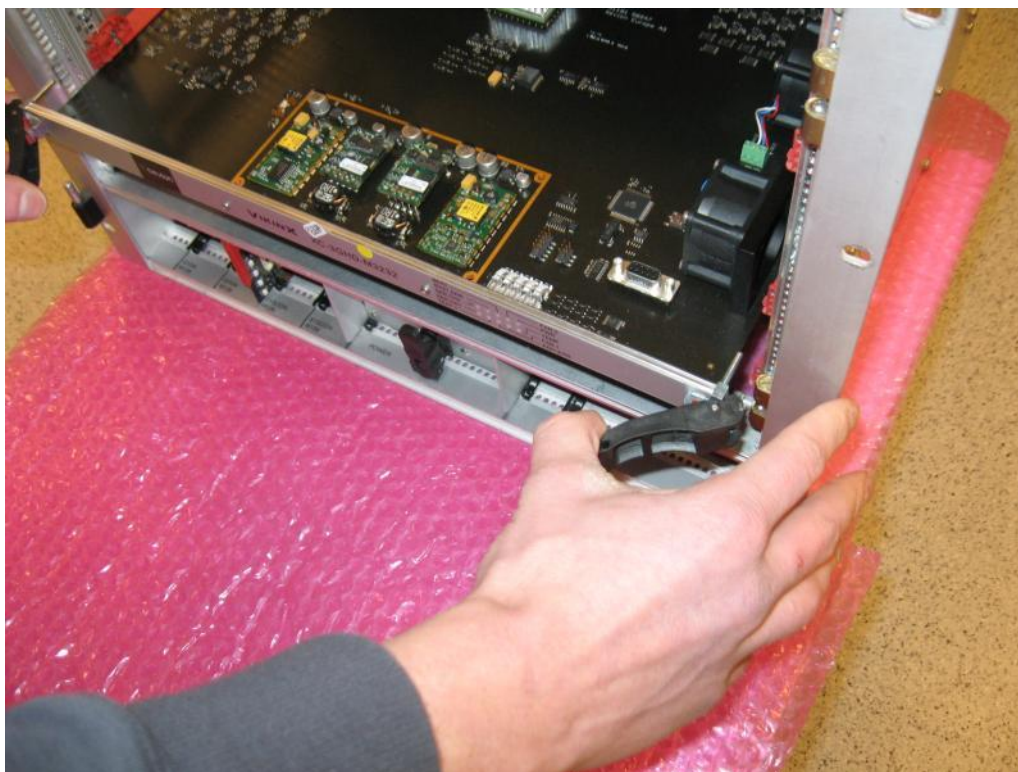
Note that it may be necessary to press hard when inserting the X-point card(s). Be sure to press the card(s) firmly into the frame, before locking the handles.

3.5.2 Card removal

To remove an X-point card from the frame, release the card by pushing the red knobs on each handle until each handle releases from its locked position.

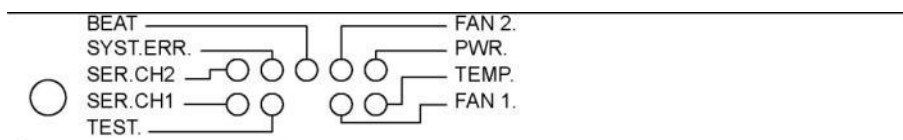


Then pull both handles simultaneously, and pull the card out of the frame.



3.5.3 Status LEDs

There are 9 LEDs on the front of each Analog Audio X-point card:



They indicate the following:

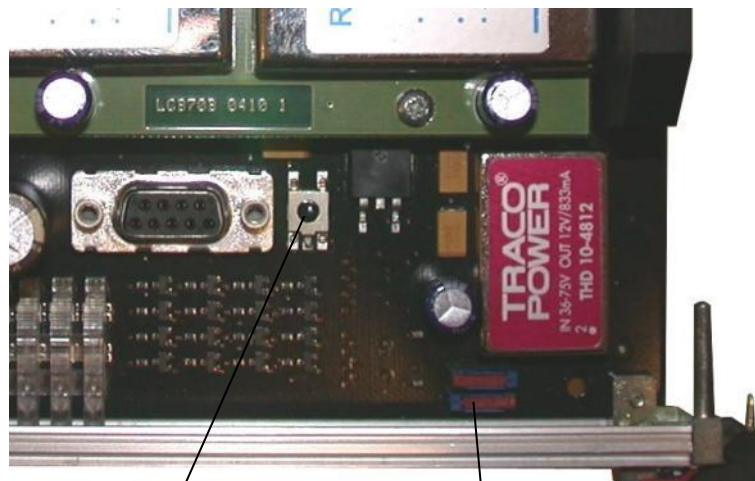
Diode	Red LED	Green LED
BEAT		Blinks when the μ Controller is running (heartbeat).
SYST.ERR	A fault is detected on the card. The system controller lights, or turns off this LED. This is used for simplifying the identification of a module.	
SER.CH2		Blinks each time the μ Controller of the X-point card answers a message from the system controller on communication channel 2.
SER.CH1		Blinks each time the μ Controller of the X-point card answers a message from the system controller on communication channel 1.
TEST	No special function; for internal testing purpose only.	

Diode	Red LED	Green LED
FAN 2	Fan error, when the fan speed is outside its normal range. FAN2 is the innermost fan on the X-point card.	The fan speed of FAN2 is in its normal range. FAN2 is the innermost fan on the X-point card.
PWR	Any of the voltages on the card is outside their legal range.	All internal voltages are OK.
TEMP	The temperature of the card is outside its legal range.	The temperature of the card is OK.
FAN1	Fan error, when the fan speed is outside its normal range. FAN1 is the outermost fan on the X-point card.	The fan speed of the first fan is in its normal range. FAN1 is the outermost fan on the X-point card.

Note that all alarm ranges are configurable from the system controller.

3.5.4 Service switches and reset button

There are two slide-switches and one push-button switch on the card, as shown in the figure below.



Reset button

Service switches

The push-button switch is the RESET switch. When this button is pushed and released, the μ Controller of the X-point card resets and restarts its operation with its default settings, or the settings stored in EEPROM.

The slide switch closest to the front of the X-point card (SW2): *This switch must always stay in the right position, as seen from the card front. **The switch is for factory use only.***

The slide switch furthest from the front of the X-point card (SW4): *This switch must always be in the left position, as seen from the card front. **The switch is for factory use only.***

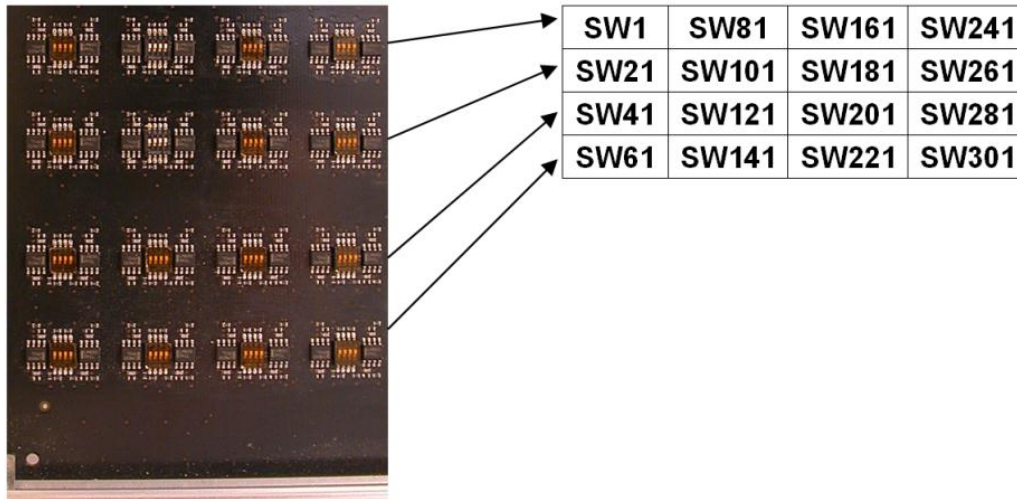
3.5.5 Gain compensation switches

There are 64 Dipswitches (16 blocks with 4 switches each) on the left side of the X-point card, as shown in the figure below. The switches are numbered as shown in the table next to the figure (seen from the front of the card).

These switches are applied to set gain compensation when using 600 Ohms load on respective outputs.

Set the Dipswitch to ON (direction towards the card front) in order to increase the level of the associated router output, to compensate for a 600 Ohms load on respective output.

Default setting is OFF (direction away from the card front).



The rows and columns of the table below have the following meaning:

- *Card positions* are numbered from the lowest position in the frame (#1), to the uppermost position in the frame (#4).
- *Output #* is the physical output from the router.

Switch # are numbered as follows: Dipswitch #1 is the rightmost switch on each block; switch #4 is the leftmost switch.

Card position: 1		Card position: 2 & 4		Card position: 3	
Output #	Switch #	Output #	Switch #	Output #	Switch #
1	SW181-2	65	SW261-2	1	SW261-2
2	SW161-1	66	SW241-1	2	SW241-1
3	SW181-1	67	SW261-1	3	SW261-1
4	SW181-3	68	SW261-3	4	SW261-3
5	SW161-4	69	SW241-4	5	SW241-4
6	SW181-4	70	SW261-4	6	SW261-4
7	SW161-2	71	SW241-2	7	SW241-2
8	SW161-3	72	SW241-3	8	SW241-3
9	SW101-2	73	SW301-2	9	SW301-2
10	SW81-1	74	SW281-1	10	SW281-1
11	SW101-1	75	SW301-1	11	SW301-1
12	SW101-3	76	SW301-3	12	SW301-3
13	SW81-4	77	SW281-4	13	SW281-4
14	SW101-4	78	SW301-4	14	SW301-4
15	SW81-2	79	SW281-2	15	SW281-2
16	SW81-3	80	SW281-3	16	SW281-3
17	SW21-2	81	SW21-2	17	SW21-2
18	SW1-1	82	SW1-1	18	SW1-1
19	SW21-1	83	SW21-1	19	SW21-1
20	SW21-3	84	SW21-3	20	SW21-3
21	SW1-4	85	SW1-4	21	SW1-4
22	SW21-4	86	SW21-4	22	SW21-4
23	SW1-2	87	SW1-2	23	SW1-2
24	SW1-3	88	SW1-3	24	SW1-3
25	SW221-2	89	SW221-2	25	SW221-2
26	SW201-1	90	SW201-1	26	SW201-1
27	SW221-1	91	SW221-1	27	SW221-1

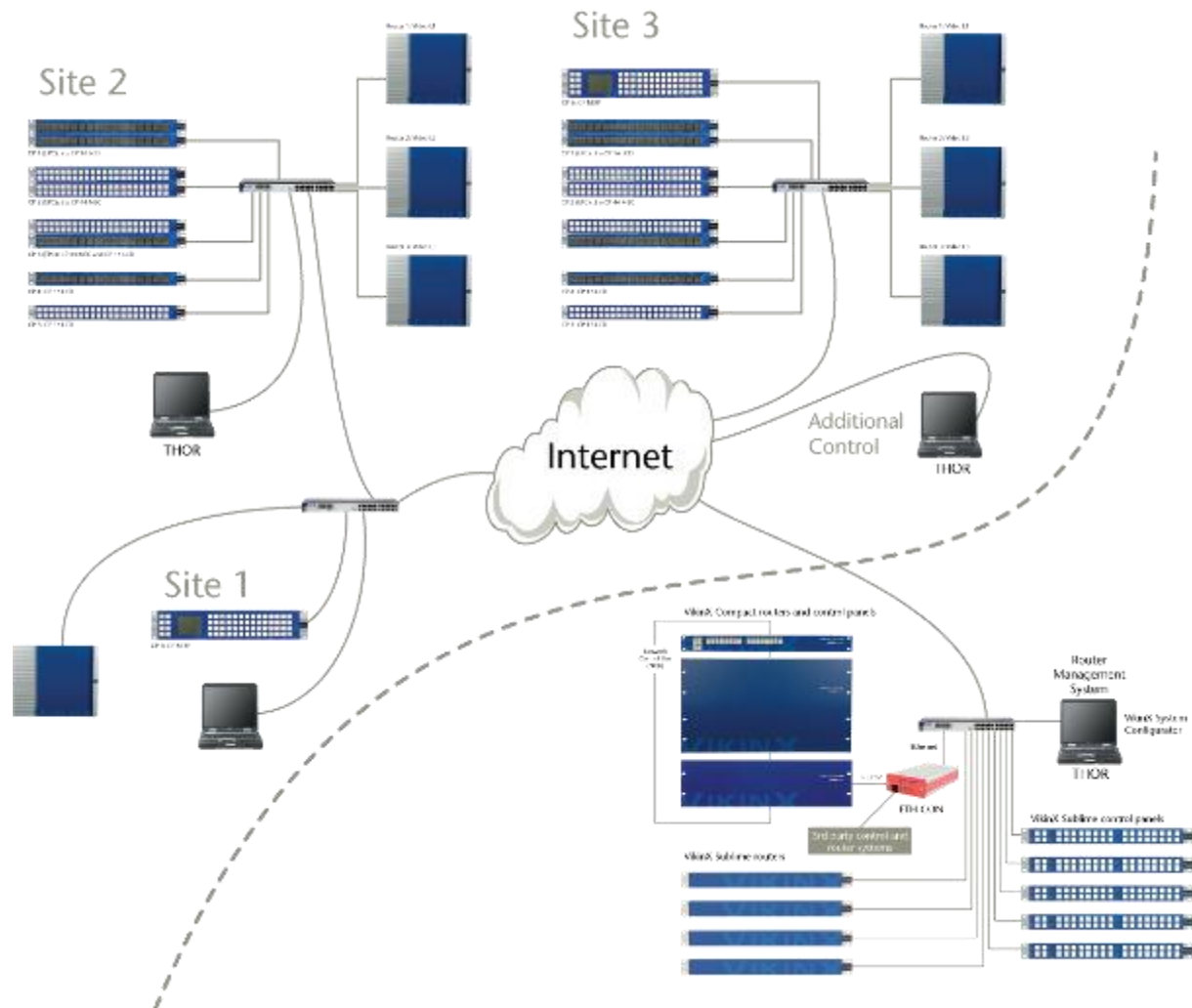
Card position: 1		Card position: 2 & 4		Card position: 3	
Output #	Switch #	Output #	Switch #	Output #	Switch #
28	SW221-3	92	SW221-3	28	SW221-3
29	SW201-4	93	SW201-4	29	SW201-4
30	SW221-4	94	SW221-4	30	SW221-4
31	SW201-2	95	SW201-2	31	SW201-2
32	SW201-3	96	SW201-3	32	SW201-3
33	SW141-2	97	SW181-2	33	SW181-2
34	SW121-1	98	SW161-1	34	SW161-1
35	SW141-1	99	SW181-1	35	SW181-1
36	SW141-3	100	SW181-3	36	SW181-3
37	SW121-4	101	SW161-4	37	SW161-4
38	SW141-4	102	SW181-4	38	SW181-4
39	SW121-2	103	SW161-2	39	SW161-2
40	SW121-3	104	SW161-3	40	SW161-3
41	SW61-2	105	SW141-2	41	SW141-2
42	SW41-1	106	SW121-1	42	SW121-1
43	SW61-1	107	SW141-1	43	SW141-1
44	SW61-3	108	SW141-3	44	SW141-3
45	SW41-4	109	SW121-4	45	SW121-4
46	SW61-4	110	SW141-4	46	SW141-4
47	SW41-2	111	SW121-2	47	SW121-2
48	SW41-3	112	SW121-3	48	SW121-3
49	SW261-2	113	SW101-2	49	SW101-2
50	SW241-1	114	SW81-1	50	SW81-1
51	SW261-1	115	SW101-1	51	SW101-1
52	SW261-3	116	SW101-3	52	SW101-3
53	SW241-4	117	SW81-4	53	SW81-4
54	SW261-4	118	SW101-4	54	SW101-4
55	SW241-2	119	SW81-2	55	SW81-2
56	SW241-3	120	SW81-3	56	SW81-3
57	SW301-2	121	SW61-2	57	SW61-2
58	SW281-1	122	SW41-1	58	SW41-1
59	SW301-1	123	SW61-1	59	SW61-1
60	SW301-3	124	SW61-3	60	SW61-3
61	SW281-4	125	SW41-4	61	SW41-4
62	SW301-4	126	SW61-4	62	SW61-4
63	SW281-2	127	SW41-2	63	SW41-2
64	SW281-3	128	SW41-3	64	SW41-3

Example: When output #57 of the card in position #1 (lowest in frame) is connected to a 600 Ohms load, you must set gain compensation on this output. This is done by setting Dipswitch #2 of SW301 in position *ON* (towards the card front).

SW301 is the lower, rightmost dipswitch block in the group of dipswitches.

4 Router communication

You gain access to router for communication purposes by connecting either the router's serial port to your computer and/or by using an Ethernet connection.



Please refer to the manual for [Multicon VX-MOD](#) for a detailed description of the applicable communication interfaces for your modular router.

5 Connecting signal cables to the router

Below you will find our standard pin-out for DB25 audio contacts. This pin-out is used for both Analog and digital audio routers. The same standard is used by Tascam and Fostex.

Channel #	DB25 Pin #		
	Hot (+)	Cold (-)	GND
1	24	12	25
2	10	23	11
3	21	9	22
4	7	20	8
5	18	6	19
6	4	17	5
7	15	3	16
8	1	14	2

All audio contacts used on the routers are female type.

5.1 Unbalanced signals on the Modular Analog Audio Router

If you want to use the Modular Analog Audio Router with unbalanced audio signals you connect these signals according to the following table:

VikinX device	Unbalanced signal connection
'+'	Audio
'-'	Shield
'GND'	Shield

5.2 Connections depending on configuration

The way to connect your signal cables depends on the chosen configuration and the router controller that is applied. Every possible configuration is described below with its appropriate connection scheme.

Do not connect your signal wires according to the text/numbering on the rear of the router. Your actual application determines the appropriate wiring, and is illustrated below.

5.2.1 Controller independent configurations

The following wiring schemes are independent on the chosen router controller. Changing controller from Syscon to Multicon VX-MOD will not change the wiring scheme.

5.2.1.1 A128128M configured as 128x128 Stereo

Right In #105-112	Right In #113-120	Right In #121-128	Right Out #105-112	Right Out #113-120	Right Out #121-128
		Right In #97-104	Right Out #97-104		
		Right In #89-96	Right Out #89-96		
Right In #65-72	Right In #73-80	Right In #81-88	Right Out #65-72	Right Out #73-80	Right Out #81-88
Right In #41-48	Right In #49-56	Right In #57-64	Right Out #41-48	Right Out #49-56	Right Out #57-64
		Right In #33-40	Right Out #33-40		
		Right In #25-32	Right Out #25-32		
Right In #1-8	Right In #9-16	Right In #17-24	Right Out #1-8	Right Out #9-16	Right Out #17-24
Left In #105-112	Left In #113-120	Left In #121-128	Left Out #105-112	Left Out #113-120	Left Out #121-128
		Left In #97-104	Left Out #97-104		
		Left In #89-96	Left Out #89-96		
Left In #65-72	Left In #73-80	Left In #81-88	Left Out #65-72	Left Out #73-80	Left Out #81-88
		Left In #57-64	Left Out #57-64		
		Left In #49-56	Left Out #49-56		
Left In #25-32	Left In #33-40	Left In #41-48	Left Out #25-32	Left Out #33-40	Left Out #41-48
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
A128128M (Configured as 128x128 Stereo Analog Audio)					

5.2.1.2 A128128M configured as 2x 128x128 Mono

Mono 2 In #105-112	Mono 2 In #113-120	Mono 2 In #121-128	Mono 2 Out #105-112	Mono 2 Out #113-120	Mono 2 Out #121-128
		Mono 2 In #97-104	Mono 2 Out #97-104		
		Mono 2 In #89-96	Mono 2 Out #89-96		
Mono 2 In #65-72	Mono 2 In #73-80	Mono 2 In #81-88	Mono 2 Out #65-72	Mono 2 Out #73-80	Mono 2 Out #81-88
Mono 2 In #41-48	Mono 2 In #49-56	Mono 2 In #57-64	Mono 2 Out #41-48	Mono 2 Out #49-56	Mono 2 Out #57-64
		Mono 2 In #33-40	Mono 2 Out #33-40		
		Mono 2 In #25-32	Mono 2 Out #25-32		
Mono 2 In #1-8	Mono 2 In #9-16	Mono 2 In #17-24	Mono 2 Out #1-8	Mono 2 Out #9-16	Mono 2 Out #17-24
Mono 1 In #105-112	Mono 1 In #113-120	Mono 1 In #121-128	Mono 1 Out #105-112	Mono 1 Out #113-120	Mono 1 Out #121-128
		Mono 1 In #97-104	Mono 1 Out #97-104		
		Mono 1 In #89-96	Mono 1 Out #89-96		
Mono 1 In #65-72	Mono 1 In #73-80	Mono 1 In #81-88	Mono 1 Out #65-72	Mono 1 Out #73-80	Mono 1 Out #81-88
		Mono 1 In #57-64	Mono 1 Out #57-64		
		Mono 1 In #49-56	Mono 1 Out #49-56		
Mono 1 In #25-32	Mono 1 In #33-40	Mono 1 In #41-48	Mono 1 Out #25-32	Mono 1 Out #33-40	Mono 1 Out #41-48
Mono 1 In #1-8	Mono 1 In #9-16	Mono 1 In #17-24	Mono 1 Out #1-8	Mono 1 Out #9-16	Mono 1 Out #17-24
Service connectors					
A128128M (Configured as 2x 128x128 Mono Analog Audio)					

5.2.1.3 A6464M configured as 64x64 Stereo

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Right In #41-48	Right In #49-56	Right In #57-64	Right Out #41-48	Right Out #49-56	Right Out #57-64
		Right In #33-40	Right Out #33-40		
		Right In #25-32	Right Out #25-32		
Right In #1-8	Right In #9-16	Right In #17-24	Right Out #1-8	Right Out #9-16	Right Out #17-24
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Left In #25-32	Left In #33-40	Left In #41-48	Left Out #25-32	Left Out #33-40	Left Out #41-48
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
A6464M (Configured as 64x64 Stereo Analog Audio)					

5.2.1.4 A6464M configured as 128x128 Mono

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Mono In #105-112	Mono In #113-120	Mono In #121-128	Mono Out #105-112	Mono Out #113-120	Mono Out #121-128
		Mono In #97-104	Mono Out #97-104		
		Mono In #89-96	Mono Out #89-96		
Mono In #65-72	Mono In #73-80	Mono In #81-88	Mono Out #65-72	Mono Out #73-80	Mono Out #81-88
		Mono In #57-64	Mono Out #57-64		
		Mono In #49-56	Mono Out #49-56		
Mono In #25-32	Mono In #33-40	Mono In #41-48	Mono Out #25-32	Mono Out #33-40	Mono Out #41-48
Mono In #1-8	Mono In #9-16	Mono In #17-24	Mono Out #1-8	Mono Out #9-16	Mono Out #17-24
Service connectors					
A6464M (Configured as 1x 128x128 Mono Analog Audio)					

5.2.1.5 A3232M configured as 32x32 Stereo

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Right In #25-32	Right Out #25-32		
		Right In #17-24	Right Out #17-24		
Left In #25-32	Right In #1-8	Right In #9-16	Left Out #25-32	Right Out #1-8	Right Out #9-16
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
A3232M (Configured as 32x32 Stereo Analog Audio)					

5.2.1.6 A3232M configured as 64x64 Mono

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Mono In #57-64	Mono Out #57-64		
		Mono In #49-56	Mono Out #49-56		
Mono In #25-32	Mono In #33-40	Mono In #41-48	Mono Out #25-32	Mono Out #33-40	Mono Out #41-48
Mono In #1-8	Mono In #9-16	Mono In #17-24	Mono Out #1-8	Mono Out #9-16	Mono Out #17-24
Service connectors					
A3232M (Configured as 64x64 Mono Analog Audio)					

5.2.1.7 A6464S configured as 128x128 Mono

Mono In #105-112	Mono In #113-120	Mono In #121-128	Mono Out #105-112	Mono Out #113-120	Mono Out #121-128
		Mono In #97-104	Mono Out #97-104		
		Mono In #89-96	Mono Out #89-96		
Mono In #65-72	Mono In #73-80	Mono In #81-88	Mono Out #65-72	Mono Out #73-80	Mono Out #81-88
		Mono In #57-64	Mono Out #57-64		
		Mono In #49-56	Mono Out #49-56		
Mono In #25-32	Mono In #33-40	Mono In #41-48	Mono Out #25-32	Mono Out #33-40	Mono Out #41-48
Mono In #1-8	Mono In #9-16	Mono In #17-24	Mono Out #1-8	Mono Out #9-16	Mono Out #17-24
Service connectors					
A6464S (Configured as 128x128 Mono Analog Audio)					

5.2.1.8 A3232S configured as 32x32 Stereo

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Right In #25-32	Right Out #25-32		
		Right In #17-24	Right Out #17-24		
Left In #25-32	Right In #1-8	Right In #9-16	Left Out #25-32	Right Out #1-8	Right Out #9-16
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
A3232S (Configured as 32x32 Stereo Analog Audio)					

5.2.1.9 A3232S configured as 64x64 Mono

Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Not in use	Not in use		
		Not in use	Not in use		
Not in use	Not in use	Not in use	Not in use	Not in use	Not in use
		Mono In #57-64	Mono Out #57-64		
		Mono In #49-56	Mono Out #49-56		
Mono In #25-32	Mono In #33-40	Mono In #41-48	Mono Out #25-32	Mono Out #33-40	Mono Out #41-48
Mono In #1-8	Mono In #9-16	Mono In #17-24	Mono Out #1-8	Mono Out #9-16	Mono Out #17-24
Service connectors					
A3232S (Configured as 64x64 Mono Analog Audio)					

5.2.2 Multicon control

The following wiring schemes are representing configurations managed by Multicon VX-MOD.

If the controller is changed, or updated from Syscon to Multicon, one must also change the wiring scheme accordingly.

5.2.2.1 A6464S configured as 64x64 Stereo

Right In #41-48	Right In #49-56	Right In #57-64	Right Out #41-48	Right Out #49-56	Right Out #57-64
		Right In #33-40	Right Out #33-40		
		Left In #57-64	Left Out #57-64		
Left In #33-40	Left In #41-48	Left In #49-56	Left Out #33-40	Left Out #41-48	Left Out #49-56
		Right In #25-32	Right Out #25-32		
		Right In #17-24	Right Out #17-24		
Left In #25-32	Right In #1-8	Right In #9-16	Left Out #25-32	Right Out #1-8	Right Out #9-16
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
Multicon I/O control of A6464S (Configured as 64x64 Stereo Analog Audio)					

5.2.3 Syscon control

Below wiring schemes are specific to routers controlled by Syscon.

5.2.3.1 A6464S configured as 64x64 Stereo

Right In #41-48	Right In #49-56	Right In #57-64	Right Out #41-48	Right Out #49-56	Right Out #57-64
		Right In #33-40	Right Out #33-40		
		Right In #25-32	Right Out #25-32		
Right In #1-8	Right In #9-16	Right In #17-24	Right Out #1-8	Right Out #9-16	Right Out #17-24
		Left In #57-64	Left Out #57-64		
		Left In #49-56	Left Out #49-56		
Left In #25-32	Left In #33-40	Left In #41-48	Left Out #25-32	Left Out #33-40	Left Out #41-48
Left In #1-8	Left In #9-16	Left In #17-24	Left Out #1-8	Left Out #9-16	Left Out #17-24
Service connectors					
Syscon I/O control of A6464S (Configured as 64x64 Stereo Analog Audio)					

6 Before calling Nevion Support

The following table shows possible symptoms, and what to do in order to correct possible error sources. Every user should read this before calling Nevion Technical Support.

Symptom	What to do...
The <i>lower</i> , <i>GREEN</i> LED on the Power Supply is OFF.	No mains or battery power supplying the frame. Check that the power supply is connected properly. This includes check of all connected power cords, etc.
The <i>upper</i> , <i>RED</i> LED on the Power Supply is ON.	There is a power supply failure, indicating that the power supply module must be replaced.
The <i>Status</i> LED on the Multicon card is RED.	There is a card error, indicating that the Multicon VX-MOD card must be replaced.
The <i>Warn</i> LED on the Multicon card is RED.	An abnormal situation has occurred. See Chapter 3.4.3. If the router has redundant PSU modules, check that both modules are properly installed, and are working. If the router has redundant Multicon VX-MOD cards, check that both cards are properly inserted, and are working.
The <i>SYST.ERR.</i> LED on one of the X-point cards is RED.	A fault is detected on the X-point card. Check that it is properly connected. If it is properly connected, the X-point card needs replacement.
A <i>FAN</i> LED on one of the X-point cards is RED.	The fan speed is outside its legal range, indicating that service is necessary.
The <i>PWR.</i> LED on one of the X-point cards is RED.	Any of the voltages on the card is outside its legal range, indicating that service is necessary.
The <i>TEMP.</i> LED on one of the X-point cards is RED.	Any of the temperatures on the card is outside its legal range, indicating that service is necessary.

7 Serial number overview

The following table shows the serial numbers of all parts of your Modular Analog Audio Router. Please refer to these numbers when contacting Nevion for product support.

Device / Part	Part / Serial number
Frame, including all static cards	
Power Supply Module #1	
Power Supply Module #2, if included	
X-point Card #1	
X-point Card #2, if included	
X-point Card #3, if included	
X-point Card #4, if included	
Multicon VX-MOD Card #1	
Multicon VX-MOD Card #2, if included	
Syscon Card #1 ⁹	
Syscon Card #29, if included	
GYDA-VX Card #19, if included	
GYDA-VX Card #29, if included	

⁹ Only if Multicon is not applied.

General environmental requirements for Nevion equipment

1. The equipment will meet the guaranteed performance specification under the following environmental conditions:
 - Operating room temperature range: 0°C to 45°C
 - Operating relative humidity range: <95% (non-condensing)
2. The equipment will operate without damage under the following environmental conditions:
 - Temperature range: -10°C to 55°C
 - Relative humidity range: <95% (non-condensing)

Product Warranty

The warranty terms and conditions for the product(s) covered by this manual follow the General Sales Conditions by Nevion, which are available on the company web site:

www.nevion.com

Appendix A Materials declaration and recycling information

A.1 Materials declaration

For product sold into China after 1st March 2007, we comply with the “Administrative Measure on the Control of Pollution by Electronic Information Products”. In the first stage of this legislation, content of six hazardous materials has to be declared. The table below shows the required information.

組成名稱 Part Name	Toxic or hazardous substances and elements					
	鉛 Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr(VI))	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
FR-128128-A / FR-6464-A	○	○	○	○	○	○
XC-A-M3232	○	○	○	○	○	○
Multicon VX-MOD	○	○	○	○	○	○
GYDA-VX (option)	○	○	○	○	○	○
POWER-SM AC	○	○	○	○	○	○
O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006.						
X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006.						

Parts without any of the above mentioned hazardous substances are indicated by the product marking:



A.2 Recycling information

Nevion provides assistance to customers and recyclers through our web site <http://www.nevion.com/>. Please contact Nevion's Customer Support for assistance with recycling if this site does not show the information you require.

Where it is not possible to return the product to Nevion or its agents for recycling, the following general information may be of assistance:

- Before attempting disassembly, ensure the product is completely disconnected from power and signal connections.
- All major parts are marked or labeled to show their material content.
- Depending on the date of manufacture, this product may contain lead in solder.
- Some circuit boards may contain battery-backed memory devices.

EC Declaration of Conformity



MANUFACTURER	Nevion Europe AS P.O. Box 1020, 3204 Sandefjord, Norway	
AUTHORIZED REPRESENTATIVE (Established within the EEA)	Not applicable	
MODEL NUMBER(S)	A3232M / A6464M / A128128M A3232S / A6464S	
DESCRIPTION	Modular Analog Stereo Audio Router	
DIRECTIVES this equipment complies with	Low voltage (EU Directive 2006/95/EC) EMC (EU Directive 2004/108/EC) RoHS (EU Directive 2002/95/EC) China RoHS10 WEEE (EU Directive 2002/96/EC) REACH	
HARMONISED STANDARDS applied in order to verify compliance with Directive(s)	EN 55103-1:1996 EN 55103-2:1996	
TEST REPORTS ISSUED BY	Notified/Competent Body	Report no:
	Nemko	42192
TECHNICAL CONSTRUCTION FILE NO	Not applicable	
YEAR WHICH THE CE-MARK WAS AFFIXED	2005	
TEST AUTHORIZED SIGNATORY		
MANUFACTURER	AUTHORIZED REPRESENTATIVE (Established within EEA)	Date of Issue
		2007-03-27
		Place of Issue
		Sandefjord, Norway
 NEVION EUROPE AS O.nr. 976 584 201 MVA	Not applicable	
Name	Thomas Øhrbom	
Position	QA Director, Nevion Europe (authorized signature)	

Nevion Europe

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